



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,627	04/01/2004	Guy F. Hudson	500155.06	2837
<div>7590 Mark W. Roberts, Ph.D. DORSEY & WHITNEY LLP Suite 3400 1420 Fifth Avenue Seattle, WA 98101</div>			<div>EXAMINER MENON, KRISHNAN S</div> <div>ART UNIT 1723</div> <div>PAPER NUMBER</div>	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/18/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/817,627

Applicant(s)

HUDSON, GUY F.

Examiner

Krishnan S. Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 65-67,69,75-90 and 92-100 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 65-67,69,75-90 and 92-100 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1723

DETAILED ACTION

Claims 65-67, 69, 75-90 and 92-100 are pending as amended 10/4/06

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 65-69 and 75-100 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 70-100 of copending Application No. 10/817,495. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '495 application recites the limitations recited in the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 65-67, 69, 75-90, and 92-100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi (US 6,077,437) in view of Chiu et al (US 6,106,714).

Hayashi-437 teaches a prior art system (which is Hayashi, US 5,647,989) for manufacturing a planarizing slurry (figure 6 and 7) having first reservoir and line (the recycle of spent slurry) with a first filter to remove particle size greater than $0.5\ \mu\text{m}$ (column 2 lines 35-45), and then mixing a slurry from a second line (fresh slurry – 126-figure 7), mixer (130), volume controls as claimed (126a, 117a, and 125), and dispenser (117; 117a). The particles sizes recited as greater than 0.3, 0.8 and 1.0 microns is taught in column 2 lines 35-45. Also please note that reservoirs in such filter lines are inherent or implied.

Hayashi-437 also teaches that the use of 0.5-micron membrane for the fine filtration is unnecessary, that larger pore size can be used, and shows a comparative study of the pore size in table 1, which includes pore size ranging from 0.5 micron to 150 microns.

Instant claims differ from the teaching of Hayashi-437 in the second line having a second filter that removes particles of size greater than 0.05 or $0.15\ \mu\text{m}$. Applicant provides the second filter to manufacture the slurry having a bimodal distribution of

Art Unit: 1723

particles. Bimodal distribution of particles is taught by Hayashi-437 – see figure 3a, 3b and 4, and column 8 lines 11-18, column 12 lines 41-46 and column 13 lines 1-9. Use of a filter in a slurry feed line to remove impurities is “conventional” (or known in the art), irrespective of the stream being fresh or recycle – see the Chiu reference, column 1 lines 37-51. It would be obvious to one of ordinary skill in the art at the time of invention to provide a filter to remove undesirable material from the second feed stream of the slurry as well, as is conventional in the art, in the teaching of Hayashi. The actual sizing of the filter is optimizable, depending on the impurities to be removed from the stream, as taught by Hayashi-437 (see column 11 lines 45 – column 12 line 23).

2. Claims 65-67, 69, 75-90 and 92-100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al (US 6,352,469) in view of Roberts et al (US 6,039,649).

Miyazaki teaches multiple feed lines of slurry for a CMP system – see figure 9 in particular, and column 13 line 60 – column 14 line 17. The reference also teaches the possibility of different slurries in column 14 lines 11-17. However, the reference does not specifically teach feeding two different slurries at the same time.

Roberts teaches polishing slurry compositions having two different particle size distributions, with size difference at least 10% - see the figures, column 3 lines 5-52, and column 1 lines 25-61. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Roberts for polishing slurry compositions as taught by Roberts because of the advantages taught by Roberts. It would be obvious to

Art Unit: 1723

one of ordinary skill in the art at the time of invention to have the slurries filtered for obtaining the particle size control as taught by Miyazaki, using separate feed streams. The sizing of the filters is optimizable: Discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art. In re Boesch and Slaney, 205 USPQ 215 (CCPA 1980); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). An in line mixer for mixing the streams would be inherent, when combining the teachings of Roberts and Miyazaki.

Response to Arguments

Applicant's arguments filed 12/26/06 have been fully considered but they are not persuasive.

With respect to the Chiu reference, applicant's conclusion that Chiu reference implies that Chiu slurry is recycled slurry because *the fresh slurry would presumably not have impurities* [Italics added] according to Hayashi references is not convincing. There is no evidence to arrive at that conclusion. On the other hand, the figures of the Chiu reference show slurry being supplied to a polishing pad from a slurry supply machine. There is no recycle line depicted. Applicant's further argument that because Chiu does not show a drain, a collection bucket or a recycle line, the drawings are not indicative of the manner in which slurry is supplied or removed, therefore, the reference

Art Unit: 1723

does not fairly teach that the slurry is fresh slurry, is not persuasive to remove Chiu as the secondary reference: Chiu is used to show the state of the art, that one of ordinary skill in the art knows using filters in slurry feed line. Moreover, by the same token as argued by the applicant, there is nothing in the reference for one to conclude that the slurry is in fact not fresh.

Applicant's claims are also for an apparatus; the slurry being filtered is only a process material. "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim." *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). MPEP 2115.

With respect to Miyazaki and Roberts, Miyazaki teaches the multiple lines, with reservoir. Roberts teaches about having bimodal distribution. Miyazaki teaches about switching lines while in continuous operation, and also about having different slurry feeds. Thus Miyazaki teaches filtering all slurry feeds, and, therefore, the combination of references teach two slurry feeds, filtered and then mixed, as shown in the rejection. Argument that Miyazaki does not teach a second feed line as recited in the claims is not persuasive; if Miyazaki taught that, it would be a 102 reference. Arguments about the mixer are not persuasive – a turbulent zone can be formed in a pipe; no specific structure is recited that would make the turbulent zone patentable.

Art Unit: 1723

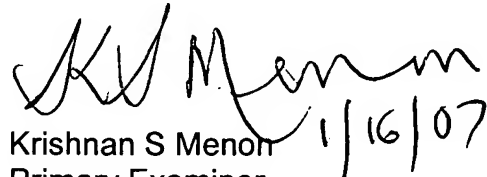
About claim 90 reciting a mixer, it is covered by the rejections.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Krishnan S Menon
Primary Examiner
Art Unit 1723
1/16/07